

RAVICH, G.B.; BOGUSH, O.F.

Ternary system benzene - nitrobenzene -  $\sim$ -dinitrobenzene.  
Zhur. ob.khim. 31 no.3:716-723 Mr '61. (MIRA 14:3)

1. Institut obshchey i neorganicheskoy khimii imeni N. S.  
Kurnakova AN SSSR.  
(Systems (Chemistry)) (Benzene)

ARUTYUNOVA, L.B.; RAVICH, G.B.

Complex microthermal and spectroscopic studies of the polymorphism  
of higher fatty acids. Dokl. AN SSSR 135 no.4:837-839 '60.  
(MIRA 13:11)

1. Institut obshchey i neorganicheskoy khimii im. N.S.Kurnakova  
Akademii nauk SSSR. Predstavлено akademikom I.I.Chernyayevym.  
(Acids, Fatty--Spectra)

S/079/61/031/003/001/013  
B118/B207

AUTHORS: Ravich, G. B. and Bogush, O. F.

TITLE: Ternary system "benzene - nitrobenzene - m-dinitrobenzene"  
(reported at the All-Union Conference on Physico-chemical  
Analysis, Moscow 1960)

PERIODICAL: Zhurnal obshchey khimii, v. 31, no. 3, 1961, 716-723

TEXT: The authors continued their studies of the reaction of benzene nitro derivatives together with the investigation of the mechanism of direct nitration of m-dinitrobenzene to 1, 3, 5-trinitrobenzene (Ref. 6). "Thiophene-free benzene" was several times distilled and solidified by cooling; the fraction boiling at 80.2-80.25°C and melting at 5.3°C was used. Nitrobenzene was treated in the same way; the fraction boiling at 210-211°C and melting at 5.7°C was chosen. m-dinitrobenzene (melting point: 90°C) was several times recrystallized from alcohol. The following binary systems were studied by thermal analysis: "Benzene - nitrobenzene", "benzene - m-dinitrobenzene", and "nitrobenzene - m-dinitrobenzene". In the system C<sub>6</sub>H<sub>6</sub> - C<sub>6</sub>H<sub>5</sub>NO<sub>2</sub>, the components form a eutectic with 48.75 mole % C<sub>6</sub>H<sub>5</sub>NO<sub>2</sub>.

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Ternary system . . .

(melting point: -25°C). In the system "C<sub>6</sub>H<sub>6</sub> - m-C<sub>6</sub>H<sub>4</sub>(NO<sub>2</sub>)<sub>2</sub>", the components form a eutectic with 9.25 mole % C<sub>6</sub>H<sub>4</sub>(NO<sub>2</sub>)<sub>2</sub> (melting point: -1°C). In the system "C<sub>6</sub>H<sub>5</sub>NO<sub>2</sub> - m-C<sub>6</sub>H<sub>4</sub>(NO<sub>2</sub>)<sub>2</sub>", an incongruously melting compound of the following formula is formed: C<sub>6</sub>H<sub>5</sub>NO<sub>2</sub> · C<sub>6</sub>H<sub>4</sub>(NO<sub>2</sub>)<sub>2</sub>; the point of transition lies at 25°C and corresponds to 63.5 mole% C<sub>6</sub>H<sub>5</sub>NO<sub>2</sub>; the eutectic point lies at 0° and corresponds to 92.50 mole% C<sub>6</sub>H<sub>5</sub>NO<sub>2</sub>. The compound

C<sub>6</sub>H<sub>5</sub>NO<sub>2</sub> · C<sub>6</sub>H<sub>4</sub>(NO<sub>2</sub>)<sub>2</sub> is apparently capable of influencing the nitration rate of nitrobenzene. The liquidus surface of the ternary system C<sub>6</sub>H<sub>6</sub> - C<sub>6</sub>H<sub>5</sub>NO<sub>2</sub> - C<sub>6</sub>H<sub>4</sub>(NO<sub>2</sub>)<sub>2</sub> was studied. The system contains four crystallization fields and two non-variant points: the eutectic and the peritectic point. The field of the compound C<sub>6</sub>H<sub>5</sub>NO<sub>2</sub> · C<sub>6</sub>H<sub>4</sub>(NO<sub>2</sub>)<sub>2</sub>, forming in the binary system, extends far into the ternary system. This is the reproduction of a lecture read at the Fourth All-Union Conference on Physico-chemical Analysis, Moscow, 1960. M. A. Klochko and M. Sh. Kurbanov are mentioned.

Card 2/3

Ternary system ...

S/079/61/031/003/001/013  
B118/B207

There are 5 figures, 4 tables, and 21 references: 7 Soviet-bloc and 14 non-Soviet-bloc. The 3 references to English-language publications read as follows: 1) E. Mc. Cormack, Ind. Eng. Ch. 29, 1933 (1937); Ch. A., 1947, 153. 2) F. Pounder, I. Masson, J. Chem. Soc., 1934, 1357. 3) USA Patent 2, 643, 271 (1953).

ASSOCIATION: Institut obshchey i neorganicheskoy khimii imeni N. S. Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry imeni N. S. Kurnakov of the Academy of Sciences USSR)

SUBMITTED: April 21, 1960

Card 3/3

21980

S/020/61/157/005/004,026  
3101/2203

5.4700(1273,1320,1043)

AUTHORS: Kavich, G. B. and Burtsev, Yu. N.

TITLE: Effect of polymorphism on thermal conductivity

PERIODICAL: Sibkady zhurnal nauch. SSSR, v. 717, no. 5, 1981, 1155-1157

TEXT: The authors studied reversible and irreversible transitions of modifications of polymorphous substances. To study the effect of polymorphism on thermal conductivity, an apparatus was designed (Fig. 1) whose maximum error of measurement was 2%. It consists of the cylinder 1 (inside diameter 3-4 mm), the funnel tube 2, the four-channel capillary tube (outside diameter 1.5-2.0 mm) which is centrally inserted in 1 by means of the Teflon stopper 3, and contains the copper-constantan thermocouple 4 (diameter 0.10 mm) and the nichrome heater 6 (diameter 0.10 mm). The cylinder 1 is surrounded by two jackets 7 and 8, through which liquid flows from a Wobser thermostat; the temperature of the liquid is measured by thermocouple 9 in the capillary tube 10. The apparatus is closed by a cover 11. The socket 12 with cock 13 is connected to the vacuum pump. 5 and 9 are connected in such a way that both

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3/20/61/137/005/524/026  
3101/0203

## Effect of polymorphism on thermal ...

the temperature on the walls of 4 and 1 and the temperature difference can be measured. A 110-1 (PPTX-1) potentiometer is used for measuring. If heater 1 is fed with constant amperage, the wall of 4 remains at constant temperature, and the temperature difference between 4 and 1 only depends on the thermal conductivity  $\lambda$  of the intermediate substance:  $t_1 - t_2 = q \ln(d_2/d_1)/12\pi$ , where  $q$  is the heat amount emitted from the heater per unit time,  $l$  is the length of the capillary tube 4,  $t_1$  is the temperature of 4,  $t_2$  that of 1,  $d_2$  the diameter of 1,  $d_1$  the diameter of 4. The apparatus was calibrated with substances whose  $\lambda$  was exactly known, such as water, glycerin, toluene, air. On the basis of the calibration curves  $\lambda = f(t)$ , the unknown  $\lambda$  of other substances was determined. In the present study, the  $\lambda$  of p-dichlorobenzene was measured between -40 and +90°C. The substance was molten in cylinder 1, and the  $\lambda$  of the melt was determined (Fig. 2, curve I). Then, the substance was slowly or quickly crystallized, and the  $\lambda$  determined for the various solid phases. Two stable modifications were found: a (Curve IV) with  $\lambda = (22 - 33) \cdot 10^{-3}$  cal/cm.sec.deg., and  $\beta$  (Curve III) with

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B101/B203

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$\lambda = (37 - 40) \cdot 10^{-5}$  cal/cm.sec.degr. The transition temperature for  $\alpha \rightleftharpoons \beta$  lies at  $\sim 32^\circ\text{C}$ .  $\alpha$  can be overheated to  $40^\circ\text{C}$  by quick heating,  $\beta$  can be undercooled to  $30^\circ\text{C}$  by quick cooling. Besides, metastable modifications were found.  $\beta'$  (Curve II) is formed by quick cooling; it exists between  $+32$  and  $+53^\circ\text{C}$ ,  $\lambda = (63 - 70) \cdot 10^{-5}$  cal/cm.sec.degr. This modification passes over to  $\beta$  after 4-5 days. There may be other, briefly existing, metastable forms between  $\beta$  and  $\beta'$ . The transition  $\beta \rightarrow \alpha$  occurs via the metastable form  $\alpha'$  (Curve V),  $\lambda = (35 - 39) \cdot 10^{-5}$  cal/cm.sec.degr. There are 2 figures and 6 references: 3 Soviet-bloc and 3 non-Soviet-bloc. The reference to the English-language publication reads as follows:  
G. A. Jeffrey, W. J. McVeagh, J. Chem. Phys., 23, no. 6, 1165 (1955). u

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry imeni N. S. Kurnakov, Academy of Sciences USSR)

PRESENTED: November 25, 1960, by I. V. Tananayev, Academician  
Card 3/5

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S/020/61/137/005/024/026  
B101/B203

Effect of polymorphism on thermal ...

SUBMITTED: November 23, 1960

Fig. 1. Apparatus for measuring the thermal conductivity of substances in solid and liquid state.

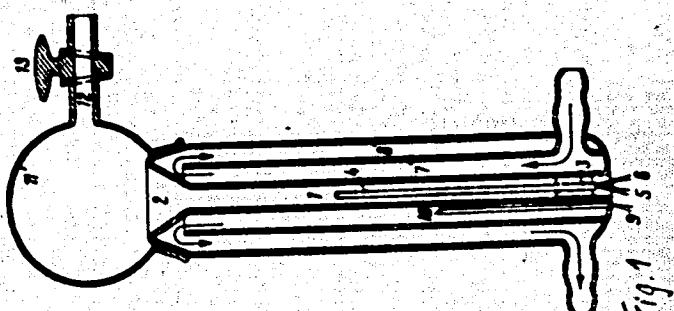


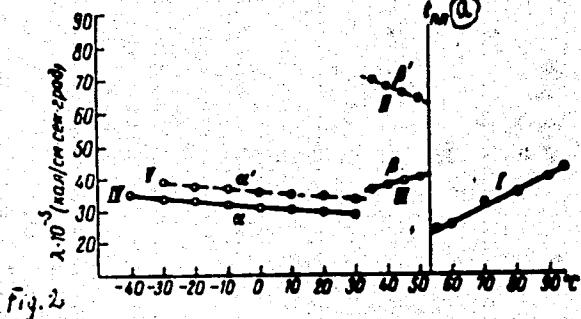
Fig. 1

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S/020/61/137/005/024/026  
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Effect of polymorphism on thermal ...

Fig. 2. Thermal conductivity of p-dichlorobenzene. Legend: (a) melt-  
ing point.



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S/020/60/135/004/019/037  
B016/B062

AUTHORS: Arutyunova, L. B. and Ravich, G. B.

TITLE: Combined Micrometric and Spectroscopic Study of the Polymorphism of Higher Fatty Acids

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 135, No. 4, pp. 837-839

TEXT: The authors report on a combined thermal and spectroscopic analysis of stearic, palmitic, and oleic acid, and find this method to be well suited for studying polymeric organic compounds. The MKC-14 (IKS-14) apparatus used for this purpose was completed by various attachments. The authors thank G. I. Distler, Head of the gruppa opticheskikh tekstur (Group of Optical Textures) of the Institut kristallografii AN SSSR (Institute of Crystallography, AS USSR), who put this apparatus at their disposal. Thermograms of thin layers of the above acids were taken (methods explained in Ref. 7) and recorded by an electronic recording instrument of the type EPP-09 (EPP-09) adapted for that particular purpose. The following important results are stated: A distinct exothermic effect appears on the heating curve of a polycrystalline stearic acid film at 49°C. Therefore,

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Combined Micrometric and Spectroscopic Study S/020/60/135/004/019/037  
of the Polymorphism of Higher Fatty Acids BO 16/B062

the authors consider the conversion character of stearic acid to be irreversible. The same holds for palmitic acid which shows a similar effect at 42°C (Fig. 1). With oleic acid, by contrast, an endothermic effect was established between 20° and 20.5°C, which confirms the data of a previous paper by G. B. Ravich and coworkers (Ref. 1). On the strength of further differences established between the spectra of the stable  $\beta$ -phase and the unstable  $\alpha$ -phase of stearic and palmitic acids, as well as of the molecular compound of these two acids, the authors state that the latter is bound to be polymorphic as well. Only the band 724  $\text{cm}^{-1}$  which, in contrast to stearic acid in the molecular compound, is not split, requires a special discussion. The distinct difference between the spectra of the modifications of oleic acid (especially of the phase converting at 20.5°C) is explained by the authors as follows: One of the liquid-crystalline phases, as are characteristic of aliphatic compounds with a long chain, especially of oleic acid soaps (Ref. 10), is believed to exist here. Papers by G. B. Ravich, V. A. Vol'nova, and T. N. Kuz'mina (Ref. 1), and M. V. Vol'kenshteyn (Refs. 8, 9) are mentioned. There are 2 figures and 11 references: 5 Soviet, 4 British, 1 Danish, and 1 Dutch.

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Combined Micrometric and Spectroscopic Study  
of the Polymorphism of Higher Fatty Acids

S/020/60/135/004/019/037  
B016/B062

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova  
Akademii nauk SSSR (Institute of General and Inorganic  
Chemistry imeni N. S. Kurnakov, Academy of Sciences USSR)

PRESENTED: June 25, 1960, by I. I. Chernyayev, Academician

SUBMITTED: February 9, 1960

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RAVICH, G.V.; BURTSEV, Yu.N.

Effect of polymorphism on heat conductivity. Dokl.AN SSSR 137  
no.5:1155-1157 Ap '61. (MIRA 14:4)

1. Institut obshchey i neorganicheskoy khimii im. N.S.Kurnakova AN  
SSSR. Predstavleno akademikom I.V.Tananayevym.  
(Heat—Transmission) (Polymorphism)

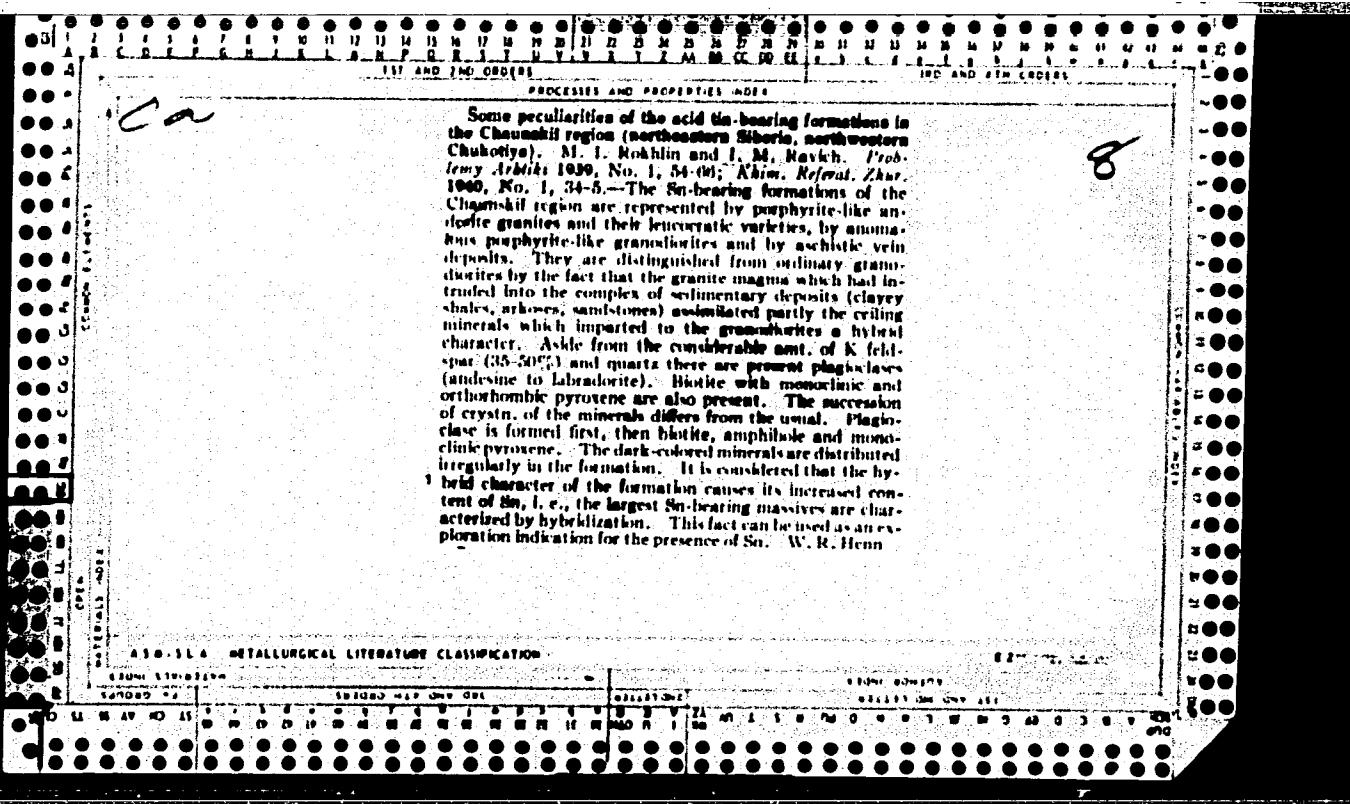
BA  
A1-3  
*Physical Properties  
Molecular Structure*

**Thermalographic study of important alkali compounds.** A. G. Anakin and G. V. Matveeva (C. A. Abstr. No. U.S.S.R., 1960, 308-311).—Heating curves of small amounts of substances placed in a loop of a thermocouple are recorded by means of a differential method.

RAVICH, I., kandidat biologicheskikh nauk.

Antibiotics in intestinal infections. Antibiotiki 7 no.1:16-30 '54.  
(MLRA 7:5)

(Antibiotics) (Intestines—Diseases)



RAVICH, I.S.

Construction operations should be carried out rapidly and with high  
work quality. Vest. sviazi 25 no.8:1-2 Ag '65.

(MIRA 18:10)

1. Zamestitel' ministra svyazi SSSR.

USSR/Miscellaneous - Communications

Card 1/1. Pub. 133 - 12/23

Authors : Ravich, I. S., Head of the Main Office of Communications Line Division

Title : Means to forestall interruptions in the operation of communication lines caused by ice and hoarfrost deposits

14

Periodical : Vest. svyazi 11. 18 - 19, Nov 1954

Abstract : Means of preventing interruptions in the operation of telephone and telegraph lines due to attenuation in the lines caused by ice and hoarfrost are discussed. Two methods to overcome the results are suggested for eliminating these interruptions; (1) inserting additional repeater amplifiers, counteracting the negative effect of attenuation, and (2) cleaning the wires mechanically by means of long poles operated from emergency trucks.

Institution: .....

Submitted: .....

RAVICH, I.S.

Present status and future of long-distance communications. Vest.  
sviazi 21 no.10:3-6 0 '61. (MIRA 14:10)

1. Nachal'nik Glavnogo upravleniya mezhdugorodnoy telefonno-te-  
legrafnoy svyazi Ministerstva svyazi SSSR.  
(Telecommunication)

YERMOL'YEVA, Z.V.; FURER, N.M.; RAVICH, I.V.; NAVASHIN, S.M.; BRAUDE, A.I.;  
FOMINA, I.P.; ZHUKOVSKAYA, N.A.; BALEZINA, T.I.; VED'MINA, Ye.A.;  
GOLOSOVA, T.V.; NEIROVSKAYA, B.M.; TERENT'YEVA, T.G.

Experimental study and clinical use of lysozyme. Antibiotiki  
8 no.1:39-45 Ja'63. (MIRA 16:6)  
(LYSOZYME)

RAVICH, I.V.

Effect of biologically active substances (phagolysates) on tumor  
growth. Antibiotiki 4 no.6:44-49 N-D '59. (MIRA 13:3)

1. Laboratoriya novykh antibiotikov (gaveduyushchiy - chlen-korres-  
pondent AMN SSSR prof. Z.V. Ternol'yeva) TSentral'nogo instituta  
usovershenstvovaniya vrachey.

(NEOPLASMS exper.)

(BACTERIOPHAGE)

(SHIGELLA)

(SALMONELLA TYPHOSEA)

(STAPHYLOCOCCUS)

YERMOL'YEVA, Z.V.; VAYSBERG, G.Ye.; BRAUDE, A.I.; RAVICH, I.V.; GOLOSOVA, T.V.;  
PASTERNAK, N.A.

Effect of bacterial polysaccharides on the growth of experimental  
tumors. Antibiotiki 10 no.2:134-137 F '65.

1. Kafedra mikrobiologii TSentral'nogo instituta usovershenstvovaniya  
vrachey, Moskva. (MIRA 18:5)

PASTERNAK, N.A.; RAVICH, I.V.; GUSLITS, S.V.

Treatment of diphtherial carriers with antibiotics of the tetracycline series with ecmoline. Antibiotiki 3 no.2:82-85 Mr-Ap '58.  
(MIRA 12:11)

1. Kafedry mikrobiologii i epidemiologii TSentral'nogo instituta usovershenstvovaniya vrachey.

(DIPHTHERIA, transmission,  
prev. ther. of carriers with ecmoline with  
tetracycline (Rus))

(TETRACYCLINE, ther. use,  
diphtherial carriers, with ecmoline (Rus))

(ANTIBIOTICS, therap. use,  
ecmoline ther. of diphtherial carriers, with  
tetracyclines (Rus))

YERMOLEV'YA, Zinaida Vassarionovna; KAVICH, Isabella Vladimirovna;  
PAVASHIN, S.M., nauchnyy redaktor; BENEZANOVSKAYA, L.Ia., redaktor;  
YSLAGIN, A.S., tekhnicheskiy redaktor

[Antibiotics] Antibiotiki. Moskva, Izd-vo "Sovetskaya Rossiia,"  
1957. 35 p. (Bibliotekha v pomoshch' lektoru, no.7) (MLRA 10:10)  
(ANTIBIOTICS)

YERMOL'YEVA, Z. V.; FURER, N. M.; VAYSBERG, G. Ye.; RAVICH, I. V.; NEMIROVSKAYA, E. V.

"New antibiotic preparations and other biologically active compounds of natural origin."

report submitted for Antibiotics Cong, Prague, 15-19 Jun 64.

Dept of Microbiology & Lab of New Antibiotics, Cent Inst for Post-Graduate Training, Moscow.

PASTERNAK, N.A., RAVICH, I.V.

Accelerated diagnosis and antibiotic treatment for diphtheria carriers. Antibiotiki 3 no.4:106 Jl-Ag '58 (HIRA 11:10)

1. Kafedra mikrobiologii (zav. - chlen-korrespondent AMN SSSR prof. Z.V. Yermol'yeva) Tsentral'nogo instituta usovershenstvovaniya vrachey.

(DIPHTHERIA)  
(ANTIBIOTICS)

YERMOL'YEVA, Z.V.; RAVICH, I.V.; LAVASHIN, S.M.; BRAUDE, A.I.; FOMINA, I.P.;  
TERENT'YEVA, T.G.; POKLODOVA, N.V.; BOYKO, V.I.

Experimental study of the antitumor action of some substances  
of natural origin. Antibiotiki 7 no.7: 571-581 J1'62.  
(MIRA 16:10)

1. Laboratoriya novykh antibiotikov kafedry mikrobiologii  
TSentral'nogo instituta usovershenstvovaniya vrachey.  
(CYTOTOXIC DRUGS) (POLYSACCHARIDES) (PEPTIDES)  
(VIRUSES)

ACC NR: AP6014658

SOURCE CODE: UR/0297/65/010/002/0134/0137

AUTHOR: Vermol'yeva, Z. V.; Ermolieva, Z. V.; Vaynsberg, G. Ye.; Vaisberg, G. E.; Braude, A. I.; Ravich, I. V.; Golosova, I. V.; Pasternak, N. A.

ORG: Department of Microbiology, Central Institute of Advanced Training for Physicians, Moscow (Kafedra mikrobiologii Tsentral'nogo instituta usovershenstvovaniya vrochey)

TITLE: Effect of bacterial polysaccharides on the growth of tumors in an experiment

SOURCE: Antibiotiki, v. 10, no. 2, 1965, 134-137

TOPIC TAGS: carbohydrate, tumor, bacteria, mouse, drug effect, electron microscope

ABSTRACT: Investigations established that the development of neoplasms is accompanied by the suppression of the protective powers of the organism, the reticuloendothelial system in particular. This indicates that specific therapy of the tumors should be accompanied by attempts to stimulate the defense system of the organism. With this end in view experiments were conducted to determine the effect of prodigiosin, a polysaccharide preparation obtained from Bacterium prodigiosum-- a nonpathogenic microorganism, on Ehrlich's and sarcoma 180 tumors. Mice were used in the experiments. The intraperitoneal method of administration was found to be the most effective, and was therefore applied throughout the experiment. The drug was administered to the animals in doses of 10 and 50 micrograms at various periods: two hours prior to, and 24, 48, and 72 hours after the implantation

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UDC: 615.779.925-092.18: 616-006-018

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ACC NR: AP6014658

of the tumor. The experiments established that prodigiosin was most effective when administered 24 hours after the implantation of the tumor; doses of 10 micrograms inhibited the growth of sarcoma 180 by 49 percent, while doses of 50 micrograms inhibited the growth of the tumor by 42 percent; its effect on Ehrlich's tumor was more pronounced. Larger doses did not increase the efficacy of the preparation. Electron microscopic and cytochemical investigations established that prodigiosin does not directly affect the tumor cells. It is thought, therefore, that its inhibiting effect on tumor growth is due mainly to the stimulating action of the drug on the protective powers of the organism, including those of the reticuloendothelial system. It is the authors' opinion that the preparation will eventually be clinically applied, particularly since its LD<sub>50</sub> exceeds the therapeutic dose by about 50 times. Orig. art. has: 2 tables. [JPRS]

SUB CODE: 06 / SUBM DATE: 27Oct64 / ORIG REF: 004

Card 2/2

YERMOL'YEVA, Z.V., RAVICH, I.V., BRAUDE, A.I., NAVASHIN, S.M. (Moskva)

Effect of penicillin, streptomycin and tetracycline on tumor  
growth. Antibiotiki 3 no.4:115-123 Jl-Ag '58 (MIRA 11:10)  
(ANTIBIOTICS)  
(TUMORS)

GVAZAVA, I.S.; MAGAKYAN, G.O.; RAVICH, I.V.; AKSENOVA, A.S.

Experimental polymyxin M therapy of bacillary dysentery  
in monkeys. Antibiotiki 7 no.4:327-331 Ap '62. (MIRA 15:3)

1. Klinicheskoye otdeleniye Instituta eksperimental'noy  
patologii i terapii AMN SSSR, Sukhumi, i kafedra mikrobiologii  
(zav. - chlen-korrespondent AMN SSSR prof. Z.V. Yermol'yeva)  
TSentral'nogo instituta usovershenstvovaniya vrachey.  
(DYSENTERY) (POLYMYXIN)

YERMOL'YEVA, Z.V.; VAYSBERG, G.Ye.; BRAUDE, A.I.; AFANAS'YEVA, T.I.;  
GIVENTAL', N.I.; FURER, N.M.; FOMINA, I.P.; NAVASHIN, S.M.;  
RAVICH, I.V.; VED'MINA, Ye.A.; GOSOLOVA, T.V.; ZABOLOTSKAYA, N.N.

Biological action of some polysaccharides of microbial origin.  
Antibiotiki 6 no.7:618-623 JI '61. (MIRA 15:6)

1. Kafedra mikrobiologii (zav. - chlen-korrespondent AMN SSSR  
prof. Z.V. Yermol'yeva) TSentral'nogo instituta uovershenstvovaniya  
vrachey.

(POLYSACCHARIDES)

YERMOL'YEVA, Z.V., professor; RAVICH, I.V., kandidat meditsinskikh nauk

New data on the use of antibiotics. Zdrav.Kazakh. 16 no.9:10-17 '56.  
(MIRA 10:1)

1. Chlen-korrespondent Akademii meditsinskikh nauk SSSR (for  
Yermol'yeva)  
(ANTIBIOTICS)

VAYSBERG, O.Ye., kandidat meditsinskikh nauk; RAVICH, I.V., kandidat biologicheskikh nauk.

Mechanism of the effect of antibiotics upon microbes. Antibiotiki 6 no.4:15-45 '53.  
(MLRA 6:10)  
(Antibiotics)

1957, Tsvetnoy bulvar 10/14

YERMOL'YEVA, Zinaide Vissarionovna; RAVICH, Isabella Vladimirovna;  
NAVASHIN, S.M., redaktor; BUL'DYAYEV, N.A., tekhnicheskiy redaktor

[Antibiotics] Antibiotiki. Moskva, Gos.izd-vo med. lit-ry,  
1957. 29 p. (MLRA 10:9)  
(ANTIBIOTICS)

VRUBLEVSKIY, V.I., kand.tekhn.nauk; RAVICH, K.S., inzh.

Automatic cupola charging with a crane. Mekh. i avtom.proizv. 17 no.10:  
4-6 0 63. (MIRA 17:1)

VRUBLEVSKIY, V.I., inzh.; KRYZHANOVSKIY, O.M., inzh.; PANASYUK, L.S.,  
inzh.; RAVICH, K.S., inzh.; SHCHUR, A.G., inzh.; GARNAZHENKO,  
I.O., inzh.; LEPEDEV, Ye.I., inzh.; PSAREV, A.M., inzh.;  
SALATSINSKIY, V.V., inzh.; SHOKAREV, V.A., inzh.

Over-all mechanization and automation of the composition of  
charge. Mashinostroenie no.6:45-47 N-D '62. (MIRA 16:2)

1. Institut liteynogo proizvodstva AN UkrSSR (for Vrublevskiy, Kryshanovskiy,  
Panasyuk, Ravich, Shchur). 2. Toretskiy mashinostroitel'nyy  
zavod (for Garnazhenko, Lebedev, Psarev, Salatsinskiy, Shokarev).  
(Cast iron--Metallurgy) (Automation)

VRUBLEVSKIY, V. I., kand.tekhn.nauk; RAVICH, K. S., inzh.

Automatic scales for the proportioning of charge. Mekh.i  
avtom. proizv. 18 no. 5:36-37 My '64. (MIRA 17:5)

BAVICH, K.S., inzh.; RASHIRIN, Yu.P., inzh.

Automatic cleaning of cupola-furnace tuyeres. Mashinostroenie  
no.3:38-39 My-Je '64. (MIRA 17:11)

VRUBLEVSKIY, V.I.; RAVICH, K.S.; SIMANILYA, A.I.; VAN'CHEN, I.L.

Weighing equipment for the proportioning of a cupola charge.  
Lit. proizv. no. 3:15 Mr '65. (MIRA 18:6)

RAVICH, K.S.

Distance-type device for registering the weighing of cupola  
furnace charges. Avtom. i prib. no.1:50-51 Ja-Mr '65.  
(MIRA 18:8)

KASHIRIN, Yu.P., inzh.; RAVICH, K.S., inzh.

Automatic control of a cupola unit. Nekot. i avt. proizv.  
19 no. 10:3-5 O '65. (NTPA 10:12)

VRUBLEVSKIY, V.I., inzh.: KASHIRIN, Yu.P., inzh.; RAVICH, K.S., inzh.

Automatic unit for ramming reinforced cores of ingot molds.  
Mashinostroenie no.2:52-54 Mr-Ap '62. (MIRA 15:4)

1. Institut liteynogo proizvodstva AN USSR.  
(Coremaking)

DANILOV, N.Y.; USHOVSKAYA, I.G.; RAVSH, M.A.

Procedural electromechanical clocka. Nov. med. tekhn. no.2:  
88-96 '62. (MIRA 17:11)

I. Vsesoyuznyy nauchno-issledovatel'skiy institut meditsinskikh  
instrumentov i chorudovaniya i Tsentral'nyy nauchno-issledovati-  
tel'skiy institut karortologii i fizioterapii

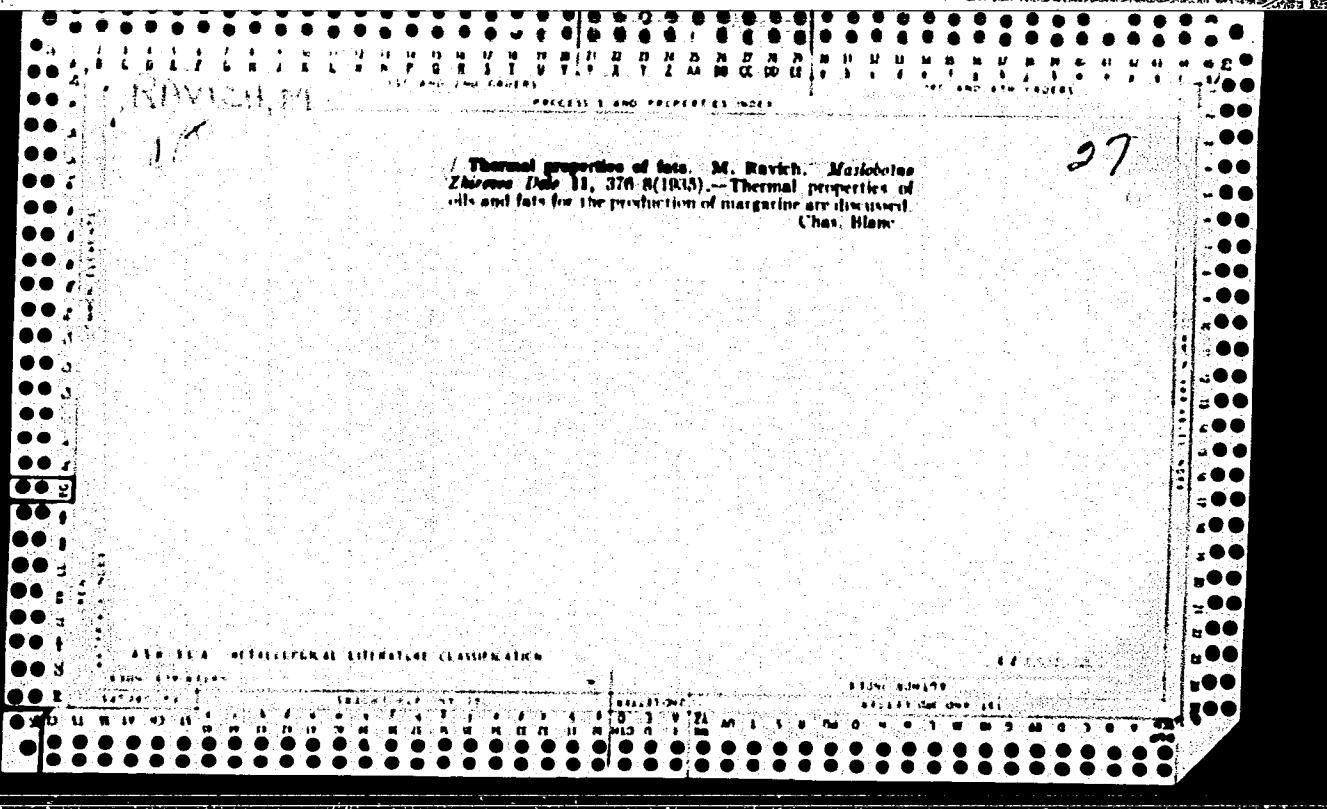
(MIRA 17:11)

RAVICH, M.

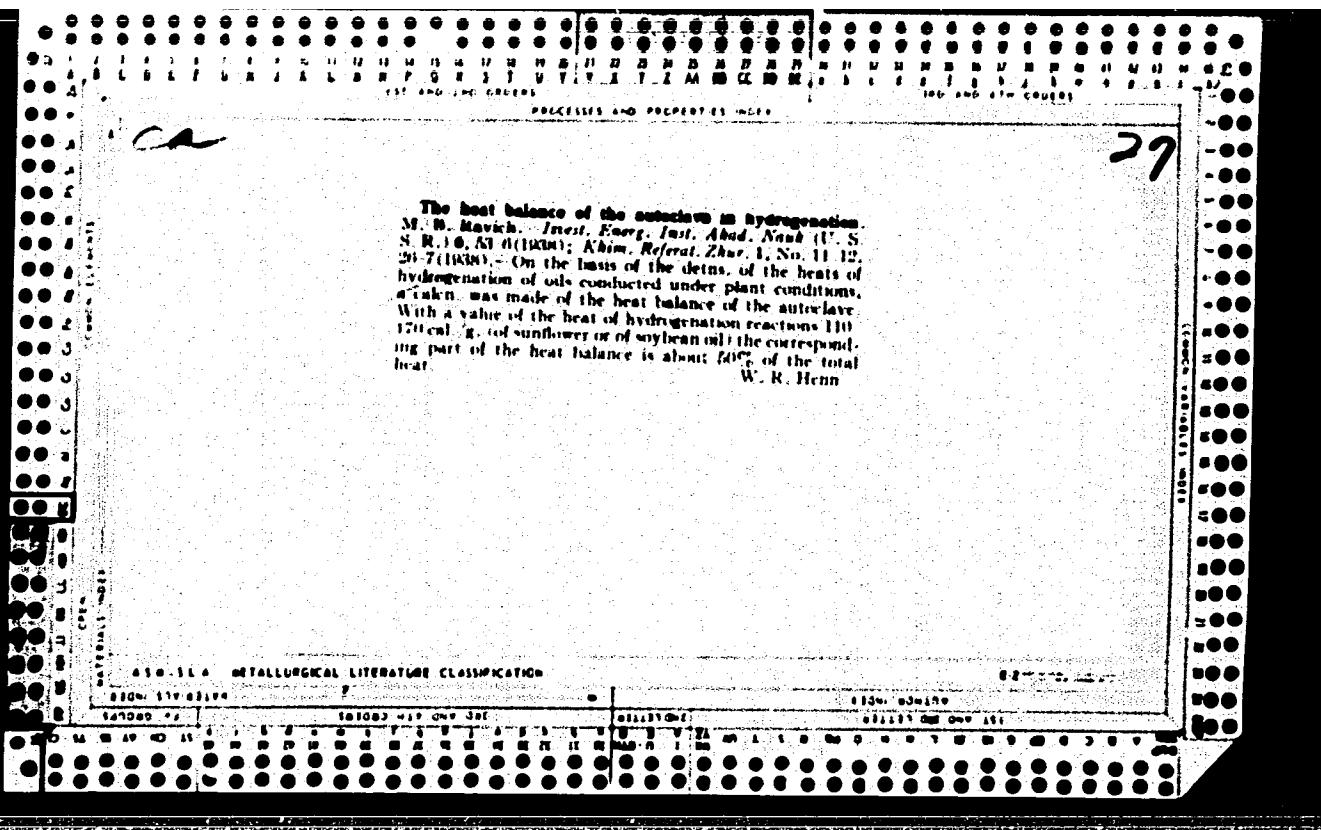
Garnet mound. Inform.biul.Sov.antark.eksp. no.18:42-43  
'60. (MIRA 13:?)  
(Banger Hills region--Garnet)

RAVICH, M.G.

Rocks in Bungen's "oasis". Trudy Mauch.-issel.inst.geol.Arkt.  
95:104-122 '57. (MIRA 12:1)  
(Antarctic regions--Rocks)



Utilization of the products of catalytic combustion as carbon dioxide fertilizers. M. D. Ryschik, N. P. Kozin, A. A. and A. P. Savchenko. "Zhurnal Promst. Issled." (J. of Ind. and Appl. Res.) No. 6, 3, 51-53 (1983). Results of expts. for the utilization of gas products of furnaces for flameless combustion for the enrichment of the atm. with CO<sub>2</sub> around plants is given. The proposed gas products are a source of CO<sub>2</sub>, consist almost exclusively of CO<sub>2</sub> (11-15%) and of N<sub>2</sub>, and they can be obtained in large quantities as waste products. The expts. were performed in flower conservatories. The influence of such CO<sub>2</sub> fertilizers was studied on a no. of flower cultures (primula, gloxinia, fuchsia, camom, etc.). The combustion products were fed into the greenhouse directly from plant furnaces operating on dominating gas and equipped with burners for flameless combustion. The CO<sub>2</sub> concn. in the greenhouse was kept at 0.3-0.4% (against the normal 0.03% in the atm.). As a result an intensive growth of the plants was observed. In comparison with the control samples the fertilized plants blossomed much sooner, grew to a larger size, had better developed leaf surfaces, etc. W. B. Henn

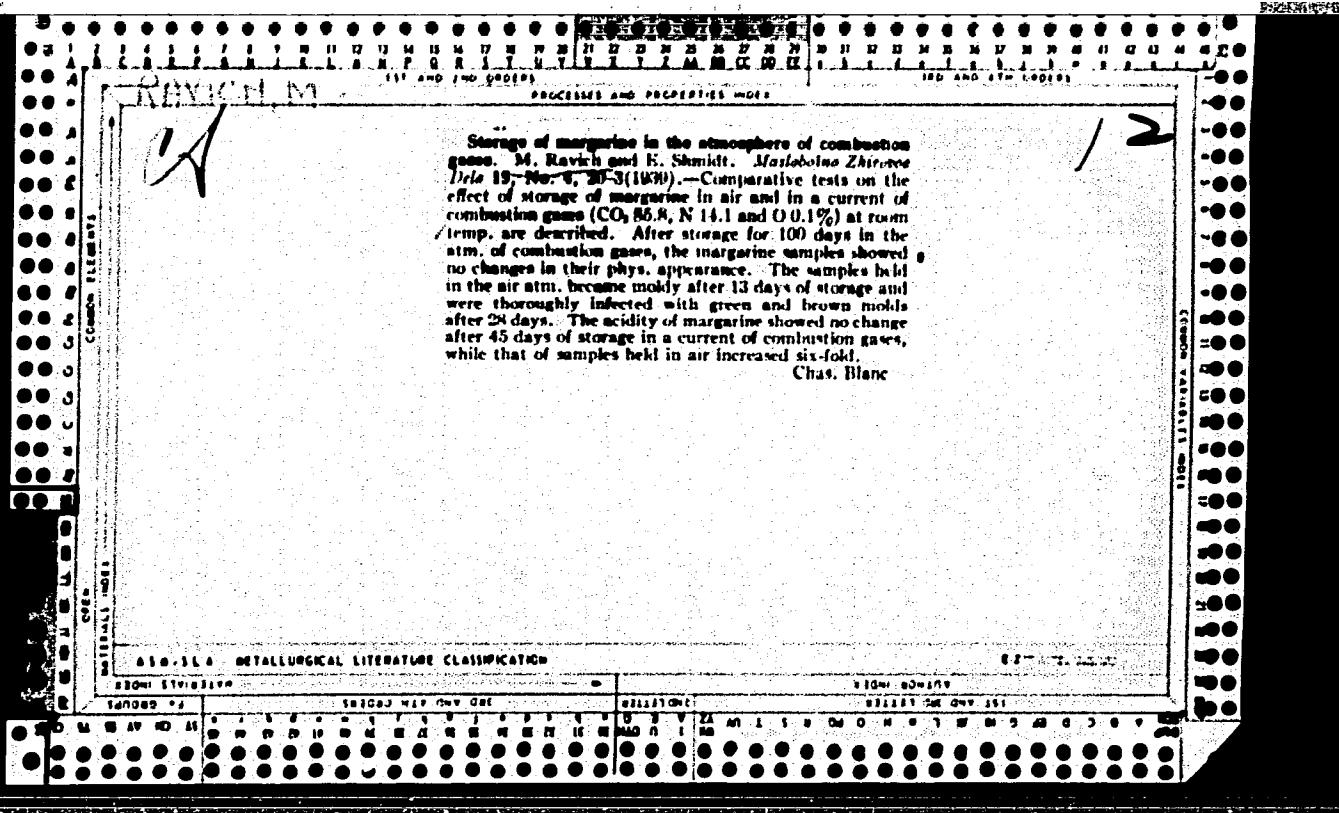


DEICH, S.; PASTEL'S, P.; KRYLOV, A.; SILIN, Yu.; RAVICH, M.

Comparative data on the absolute age of rocks in the Queen Maud Land (Antarctic). Dokl. AN SSSR 156 no. 3:554-557 '64.

(MIRA 17:5)

1. Nauchno-issledovatel'skiy institut geologii Arktiki i Bryussel'-skiy universitet, Bryussel', Bel'giya. Predstavлено akademikom D.I.Shcherbakovym.



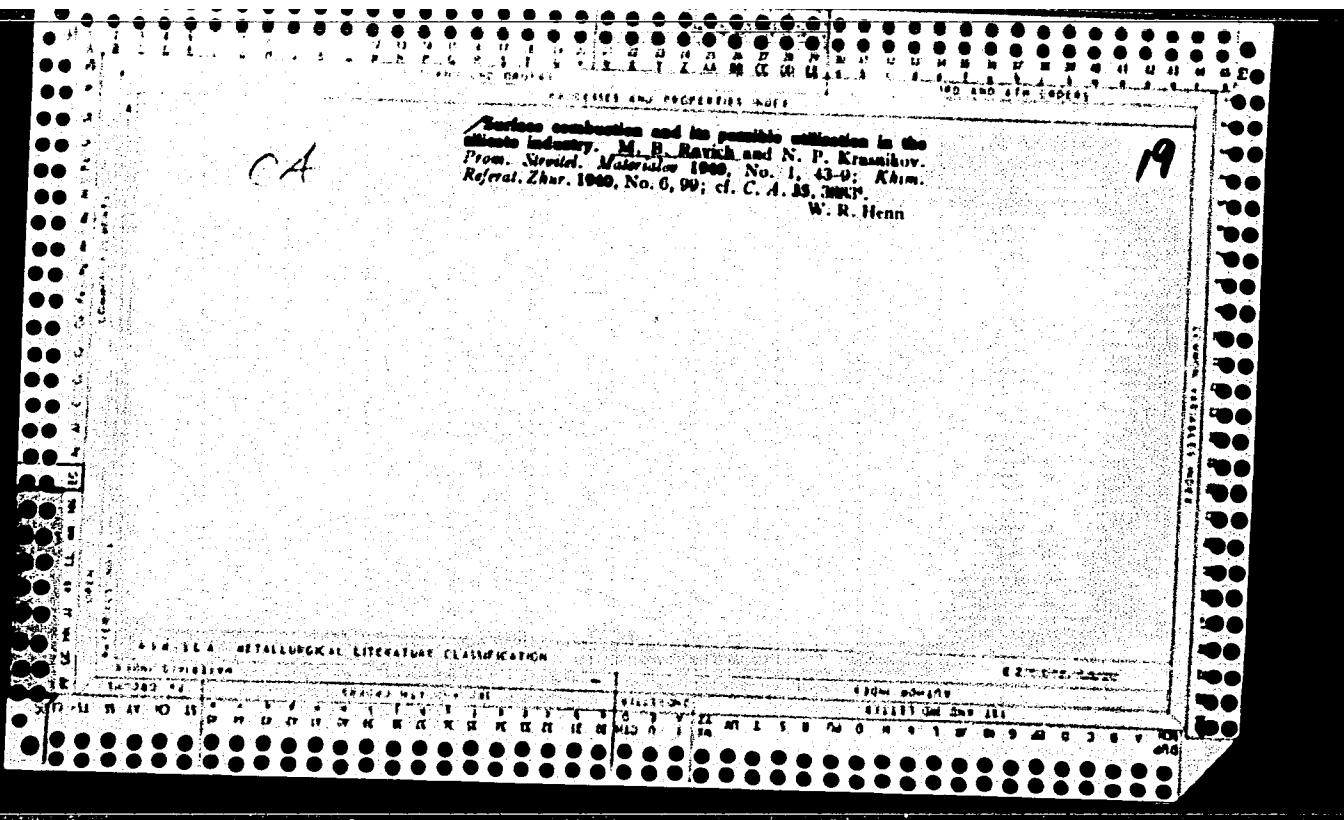
(A)

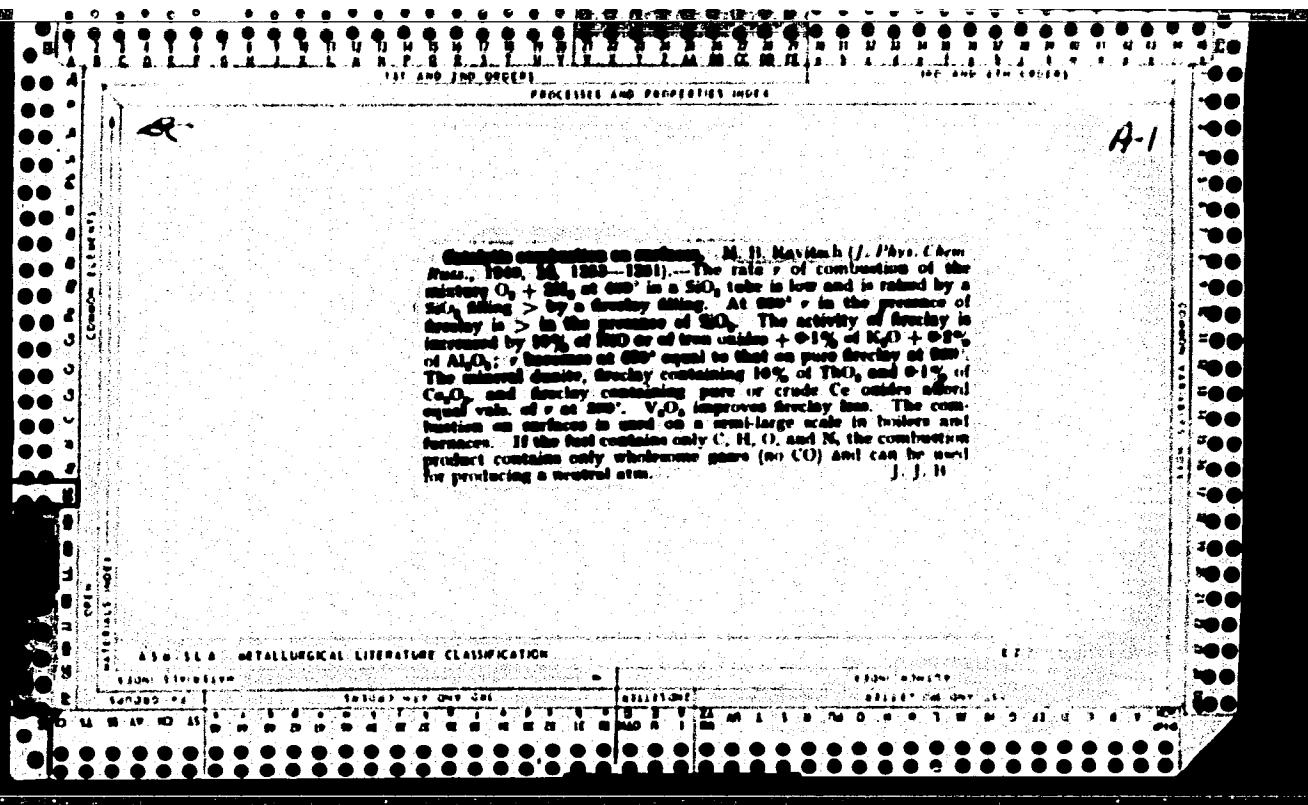
27

**Utilization of the products of flameless combustion for blowing out of the apparatus in the hydrogenation of fats** M. Yu. Kavich and V. S. Spel'sher. *Makromolekul. Znaniye*, 1970, No. 6, 11 (1970).—The possible utilization of gas products (contg. chiefly  $\text{CO}_2$  and  $\text{N}_2$ ) of various furnaces for flameless (catalytic) combustion (cf. U.S. Pat. 3,317,374) for the displacement of explosive mixts. from the app. used in the hydrogenation of fats is tentatively discussed.

## **ASME'S METALLURGICAL LITERATURE CLASSIFICATION**

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R00144443





15

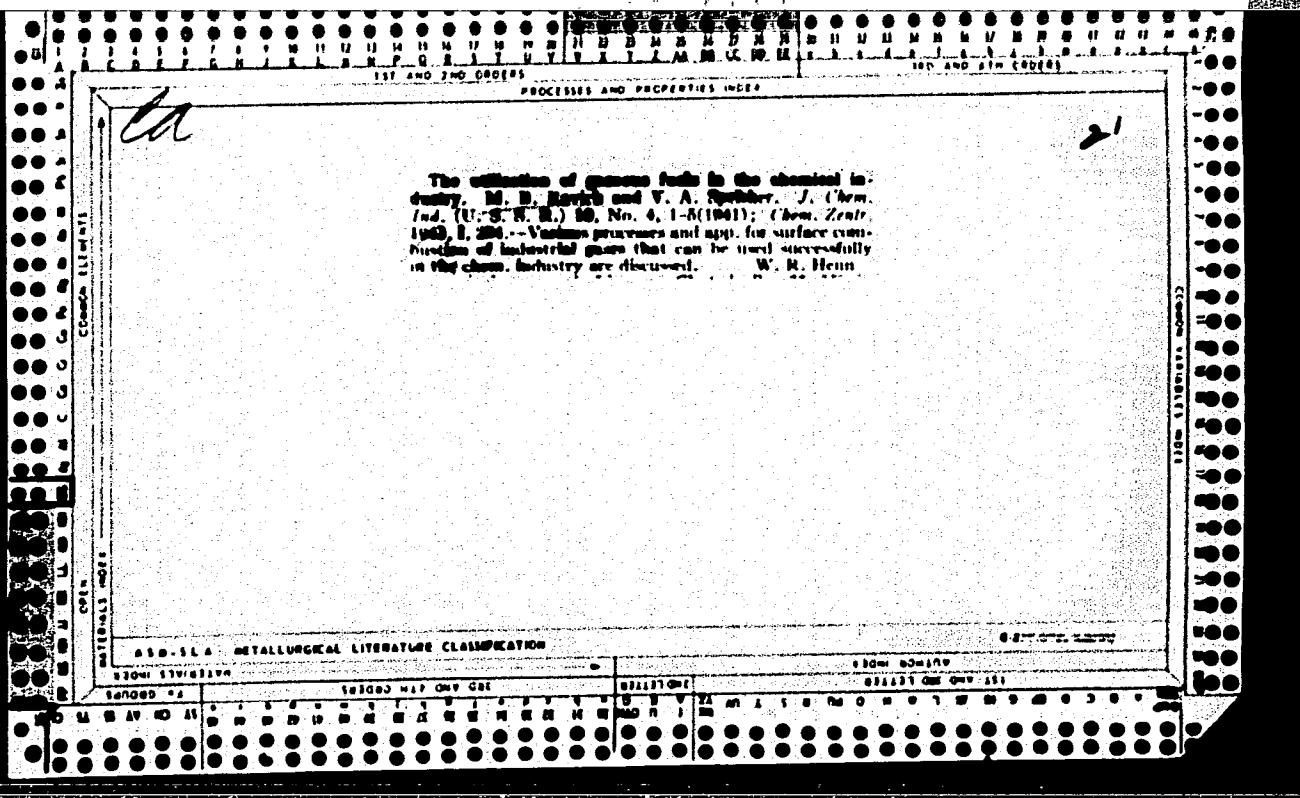
7

**INFLUENCE OF CHEMICAL ACTIVATION ON REFRACTORIES ON THE COMBUSTION OF FIRE-DAMP.**—M. B. Novitskii and N. A. Zucharov (*Comp. rend. Acad. Sci. U.R.S.S.*, **20**, 95, 1959). The kinetics of the combustion of a stoichiometric ratio of  $H_2$  and  $O_2$  (initial pressure about 1 mm. Hg) on the surfaces of various refractories have been investigated from  $100^\circ$  to  $250^\circ$ . At low temperature and pressure the rate of combustion ( $A$ ) of hydrogen on the surface of gray (chromite) bricks is increased by impregnating the surface of the bricks with oxides of Ni or Fe. Using Ural dolomite,  $A$  is greater for activated gray. The value of  $A$  at  $250^\circ$  with activated gray is equal to that for unactivated gray at  $200^\circ$ . (*Bud. Chem. Akad.*, **41**, p. 297, 1959.)

## 10.1.4 METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R00144443

1.1.1. Effect of rare-earth elements on the reduction of  $\text{Ce}_2\text{O}_3$ .  
V. V. Lopatin, N. N. Lavitschkin, I. A. Bacharov (Zh. fiz. khim., 1960, 34, 1813, 1816, 1818, 1820, 1822, 1823-184). The effect of Th and Ce oxides, and of six types of other rare-earth elements contained in the homologous, activating agents, for the surface combustion of iron chromite has been studied by measurements of the rate of decrease of pressure of  $\text{CO}-\text{H}_2$  mixtures at  $\sim 1$  atm. pressure. With 10% of a 22 : 1  $\text{ThO}_2 : \text{CeO}_2$  mixture, the rate of reduction at  $140^\circ$  was  $>$  that at  $700^\circ$  on unactivated chromite, and at  $500^\circ$  was approx. that at  $250^\circ$  on unactivated chromite. The same amount of Ce without admixture of Th produced a similar effect. A natural mixture of rare-earth oxides containing 3% of Ce oxide was equal in activity to pure Ce oxide. These effects are more pronounced when  $\text{Y}_{2}\text{O}_3$  is used as activator, but slightly inferior to those produced by Th and Fe. The activity is depressed by heating at  $1000^\circ$ .



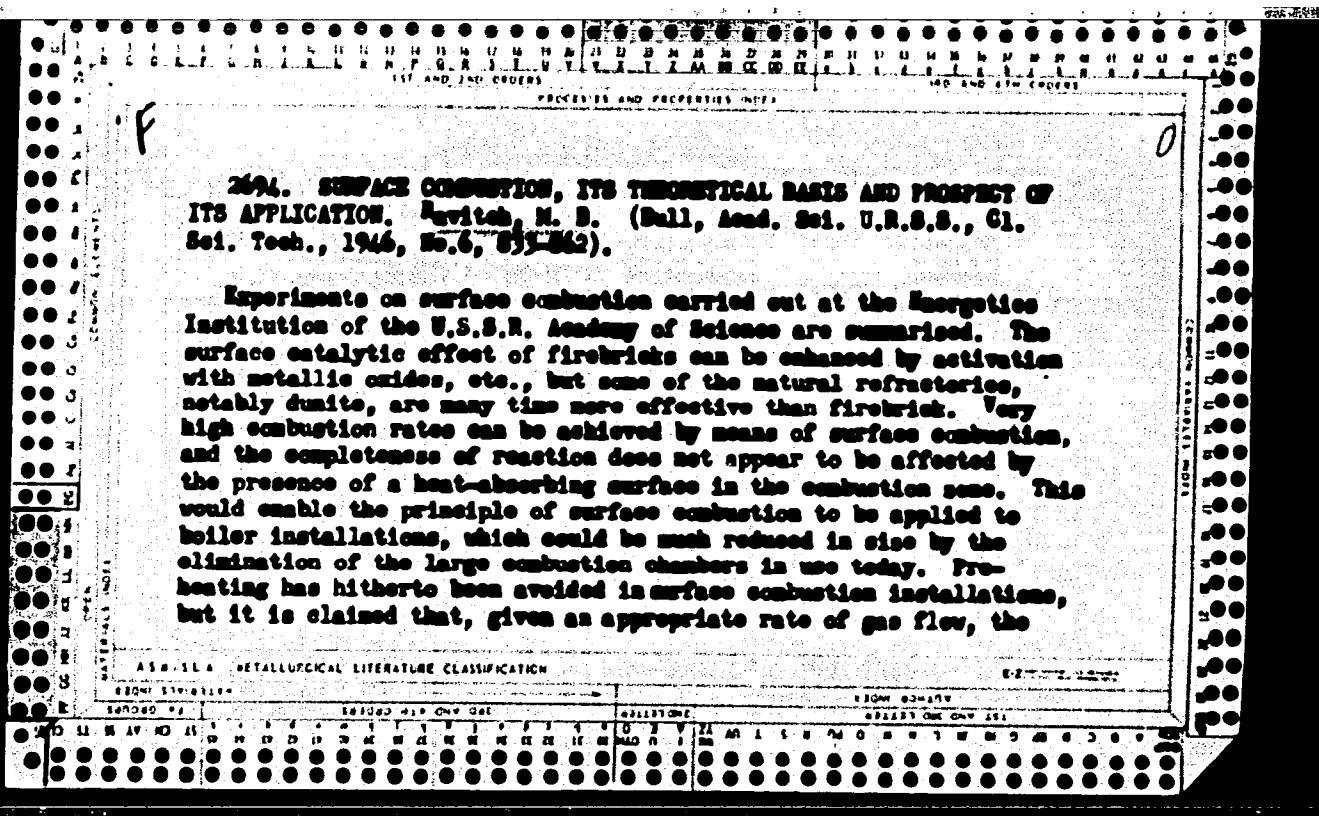
LEVICH, V. S.

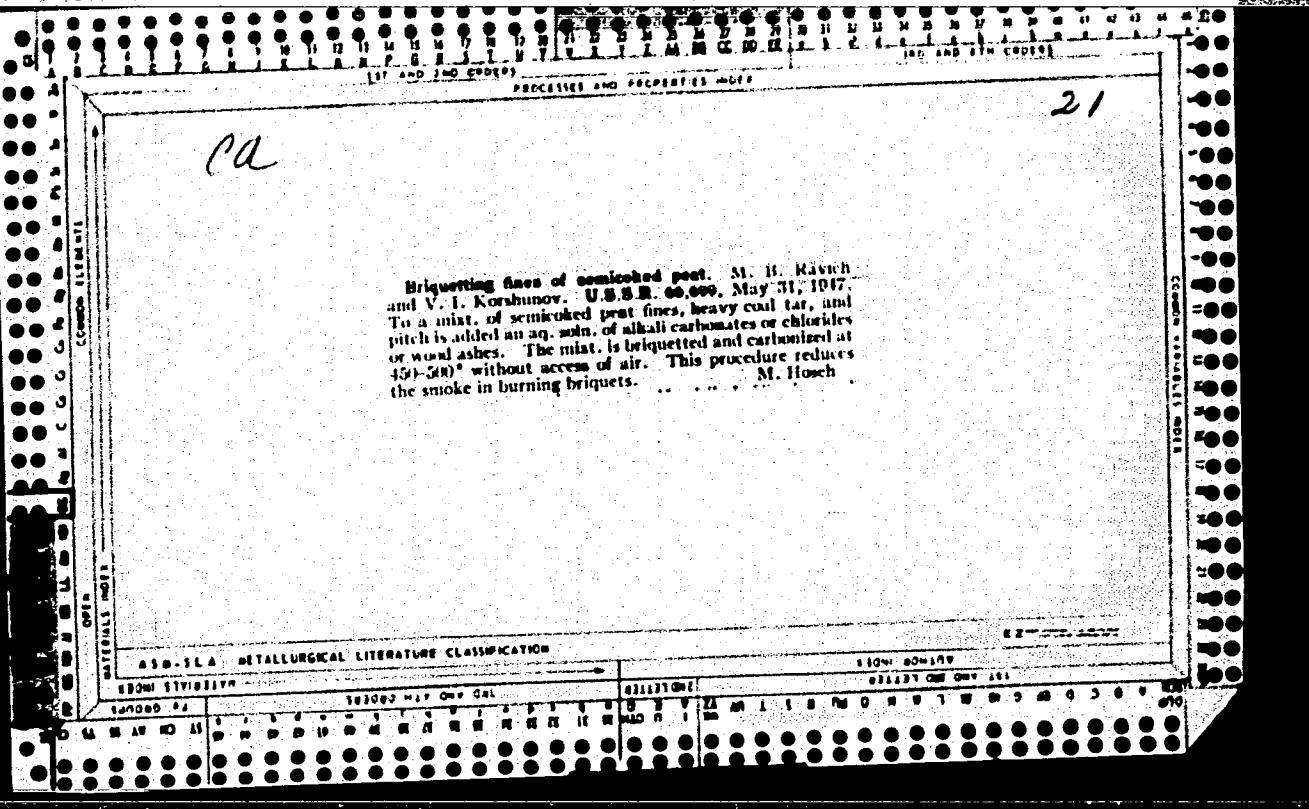
Doctor of Physico-Mathematical Science

"Surface Combustion and the Utilization of Combustion Products," IzAk Nauk SSSR. Otdel,  
Tekh. Nauk, No. 9-10, 1943.

Laureate Stalin Prize

BR-52059019





RAVICH, M. B.

At the plenary meeting of the conference of the Power Establishments of the Academies of Sciences of the Union Republics and of the Affiliates of the Academy of Science, USSR, the following paper was presented by Doctor of Technical Sciences M. B. Ravich  
■ "Flameless surface burning".

SO: Elektrичество, No. 9 Moscow, Sept. 1947 (U-5534)

BTR

**1648. Powerhouse Gasification and Gaseous (Flameless Surface Combustion.)** M. B. Raigh. 355 pages. 1949.

Academy of Sciences of the USSR. Moscow and Leningrad. C.N.S.R.C. Q13316 R19 p. 13.

Presents results of research in the field of surface flameless combustion performed in the fuel and combustion laboratory of G. M. Kuznetsov's Power Institute of the Academy of Sciences under the author's direction, and also in other research organizations. Contains new material on flameless combustion of natural and compressed gases and their properties and possible sources of application. Influence of various refractories on the process is discussed at length. Applications in industry, including miscellaneous metallurgical processes, are described in detail. Numerous graphs and diagrams. 399 ref.

**See also:**

- 1662 (coal composition vs. stoker performance)
- 1687 (B and S compounds in fuels)
- 1690 (fluid fuel tests in Diesels)
- 1806 (low temperature distillation of coal)
- 1807 (producing gases from coal)
- 1986 (heat of combustion of hydrocarbons)
- 1976 (flammability of C<sub>6</sub>H<sub>6</sub>-6 aromatics)
- 2310 (coal economics)
- 2311 (worldwide fuel economics)

RAVICH M. B.

- F
2196. FLAMELESS COMBUSTION. Ravidch, MB (Vestnik Akad Nauk S.S.R. (J. Acad Sci U.S.S.R.), Feb. 1950, vol. 20, 35-47). Discusses the special advantages of utilizing fuel in gaseous form in an industrial economy. A new type of hot water flameless combustion boiler, having an efficiency of 92-95%, is described and diagrammed. Ideas which have long limited the applicability of flameless combustion are shown to be erroneous.

BLR

PA 193T28

RAVICH, M. N.

USR/Chemistry - Low-Temperature Coke Oct 51

"Investigation of the Effect of Additives or Solid Compounds on the Process of Low-Temperature Coking of Coals," M. B. Ravich, V. A. Lanin, V. I. Korshunov

"Zhur Fiz Khim" Vol XXIV, No 9, pp 970-975

On basis of findings from studies conducted at Lab of Fuel and Combustion, Power Eng Inst, Acad Sci USSR, that certain Na compds added to coal before low-temp coking have catalytic action which leads to change in quant ratio of liquid to gaseous products, in their qual compn, and to formation of

193T28

USR/Chemistry - Low-Temperature Coke Oct 51  
(Contd)

bore active coke capable of wide use as smokeless fuel for home use and transport gas generators. Investigated low-temp coking of Zhurinskaya (?) coal with NaOH, Na<sub>2</sub>CO<sub>3</sub>, and NaCl admixts and coal from Chernogorsk (?) deposit with Na<sub>2</sub>CO<sub>3</sub> admst. NaOH had greatest catalytic effect on depth of cracking, Na<sub>2</sub>CO<sub>3</sub> less effect, while NaCl hindered splitting of hydrocarbon mol and produced little change in qual compn of coke.

193T28

RAVICH, M. B.

Bezplamenné spalování. (Z ruského originálu překl. Karel Schück)  
Praha, Technicko-vědecké vydavatelství, 1952. 23 p. (Mala knížnice  
sovetské techniky, sv. 5) (Flameless combustion. Tr. from the Russian.  
illus.)

SO: Monthly List of East European Accessions (E'AL), LC, Vol. 5, no. 12  
December 1956

USSR/Fuel - Gases

JAN 52

"Concerning Classification of Combustible Gases,"  
M. B. Ravich, N. V. Lavrov

"IZ Ak Nauk SSSR, Otdel Tekh Nauk" No 1, pp 72-80

Disputes expediency of existing classification of gaseous fuels by their heat values and method of production and suggests new classification of gases according to their combustion temp., 5 groups, and by their technological utilization. Latter classification is based on amt of potential hydrogen in gas, i.e., percentage of hydrogen yielded by given gas in processing. In this respect all gases are divided into 4

212P41

groups ranging from 500 to 50% potential H content by mol vol referred to the original. Submitted by Acad A. V. Vinter 6 Mar 51.

RAVICH, M.B.

(CA 47 no.22:12791 '53)

212P41

1. M. B. RAVICH, V. N. IVLEV
2. USSR (600)
4. Boilers
7. Gas boilers flameless combustion. Gor. khoz. Mosk. 26 no. 12. 1952.
9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

1. RAVICH, M.B.
2. USSR (6CC)
4. Heat of Combustion
7. Determining available heat of the products of gaseous fuel combustion.  
Dokl. AN SSSR 86 no.4:711-712 O '52

In many cases it is advisable to base computation, not on caloric efficiency of fuel, but on its heating effect, i.e., max possible temp of cold gas burning in cold air. Author tabulates characteristics of gaseous fuels using his method of computation. Presented by Acad G. M. Krzhizhanovskiy 15 Jul 52

252T43

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

USSR/Engineering - Heat, Combustion Jun 53

"Calculation of the Available Heat of Combustion Products Upon Burning Gaseous Fuels," M. B. Ravich

Iz Ak Nauk. SSSR, OTN, No 6, pp 856-864

Discusses simplified method for calcg available heat of combustion products without necessity to det heating value of gas, volume of combustion products and their heat capacity. Method, based on calcg ratio of volume of dry combustion products vs theoretical volume of these products, requires no chem analysis of gaseous fuel. Presented by Acad G. M. Krzhizhanovskiy 20 Jun 52.

275T39

RAVICH, M. B.

Method of calculating the heat loss due to incomplete combustion. M. B. Ravich. Doklady Akad. Nauk SSSR, 88, 201-4 (1953). The heat loss (in %) due to the incomplete combustion is taken for fuels of indefinite composition from  $\vartheta = Q_n H \cdot 100 / P$ , where  $Q_n$  is the heating power of the combustible components contained in 1 normal cu. m. of dry combustion products;  $P$  is the net heating power of the working fuel per normal cu. m. of dry combustion products produced upon burning the fuel under theoretical conditions;  $H$  is a correction for the vol. of dry combustion products due to their diln. with excess air and to the incomplete combustion of the fuel. Values of  $\vartheta$  are given for numerous solid and gaseous fuels. J. Russell Leach

BB

67

lw

RAVICH, M. B.

USSR/Physics - Fuel Computation

21 Jun 53

"Computation of Available Heat of Combustion Products of Solid and Liquid Fuel," M. B. Ravich

DAN SSSR, Vol 90, No 6, pp 1031-1034

Outlines a method for computation of heat available from products of combustion, without determining composition and heat production of fuel, the latter quantity having involved some difficulties in the problem. Tests showed good agreement between theory and experience. Rec 17 Apr 53.

2697102

RAVICH, M.B.; KNORRE, G.F., professor, doktor tehnicheskikh nauk, redaktor;  
SCHOLEV, G.K., redaktor; ALMKSEYEVA, T.V., tehnicheskiy redaktor

[Simplified methods of computation in thermotechnics] Uproshchen-  
naya metodika teplotekhnicheskikh raschetov. Moskva, Izd-vo  
Akademii nauk SSSR, 1955. 218 p.  
(MLRA 9:2)  
(Heat engineering)

RAVITCH, M.B.

4  
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✓ 921. METHOD OF CALCULATING THE COEFFICIENT OF EXCESS OXYGEN DURING THE COMBUSTION OF FUEL IN AN OXYGEN ATMOSPHERE AND OXYGEN-NITROGEN MIXTURE.

Ravich, M.B. (Izv. Akad. Nauk SSSR, Otdel. Tekh. Nauk (Bull. Acad. Sci. U.S.S.R., Ser. Tech. Sci.), 1955, (11), 141-143; abstr. in Chem. Abstr., 1956, vol. 50, 12437-12438).

The coefficient of excess oxygen, defined as  $(O_e + O_n)/O_n$ , where  $O_e$  is excess oxygen and  $O_n$  is necessary oxygen, is calculated from  $(O_e + n RO_2)/n RO_2$  where  $RO_2$  the volume of sulphur dioxide and carbon dioxide in the product, and  $O_e$  are obtained from gas analysis and  $n$ , which is equal to  $(a RO_2 + b H_2O)/RO_2$  where  $a$  and  $b$  are molar conversion factors, is a constant for various types of fuel. Among the listed values for  $n$  are: natural gas 1.98; refinery gas, 1.75; kerosene 1.48; coke 1.05, and stone coal 1.12-1.15. For incomplete combustion  $a$  is obtained by correcting  $O_e$  and  $RO_2$  to complete combustion. C.A.

jlm

FH

RAVICH, Mark Borisovich; ORLOV, V., redaktor; PIOTROVICH, M., tekhnicheskiy  
redaktor

[Fuel in the sixth five-year plan] Toplivo v shestoi piatiletke. Moskva,  
Gos. izd-vo polit. lit-ry. 1956. 69 p. (MLRA 9:12)  
(Fuel)

RAVICH, M. B. Prof. Dr. Tech. Sci.

"Rapid Method for Determining the Combustion Efficiency of Fuels," paper presented at the 5th World Power Conference, Vienna, 1956

In Branch #5

11(0)

SOV/112-58-3-3673

Translation from: Referativnyy zhurnal. Elektrotehnika, 1958, Nr 3, p 19 (USSR)

AUTHOR: Ravich, M. B.

TITLE: The Highest Combustion Temperature of a Fuel, and Heat-Engineering Calculations on Its Basis (Zharoproizvoditel'nost' topliva i teplotekhnicheskiye raschety na yeye osnove)

PERIODICAL: Tr. Vses. zaochn. energ. in-ta, 1957, Nr 8, pp 21-34

ABSTRACT: Bibliographic entry.

Card 1/1

RAVICH, M.B.  
AUTHOR:  
TITLE:

RAVICH, M.B., Dr. tech. sc.  
A Simple Method of Determining the Best Way of Utilizing Fuel.  
(Prostoj metod opredelenia effektivnosti ispolitsovaniia topliva,  
Russian)  
Vestnik Akademii Nauk SSSR, 1957, Vol 27, Nr 4, pp -85-87 (U.S.S.R.)  
Received: 6 / 1957

PA - 2851

Reviewed: 7 / 1957

PERIODICAL:

ABSTRACT:

The Institute for Energy Technology of the Academy of Science worked out a new and very simple method, which is based on the determination of thermal losses when applying the usual method. The characteristics which remain equal are: development of heat and the maximum heat content of smoke gas, the oxygen contained by the burning substance diminished the production of heat because, in the course of this process, the contents of the burning component is partly chemically connected with oxygen. The development of heat of the burning material changes only little on this occasion because the reduction of the generation of heat is caused by a reduction of the oxygen necessary for the process of combustion. Therefore also the volume of the "combustion products" produced is diminished. For the same reason the contents of the "ballast" in the fuel exercises but little influence on the development of heat.

Card 1/2

PA - 2851

A Simple Method of Determining the Best Way of Utilizing Fuel.

Calculations carried out with respect to thermal losses showed that above all in the case of liquid or gaseous fuels the above described method is of advantage.

ASSOCIATION: Not given  
PRESENTED BY:  
SUBMITTED:  
AVAILABLE: Library of Congress

RAVICH M.E.  
RAVICH, M.E.

"Power Technology Exploitation of Natural Gas,"  
paper submitted for the 1st National Congress, Czechoslovak Scientific Technical  
Society for Fuel Utilization. Karlovy Vary. Czechoslovakia, 12-17 May 58.

RAVICH, M. B.,

"Heating Value of Fuel and the Simplified Method for its Determination."

"Methods for the Computation of Flue-Gas Loss Due to Incomplete Combustion from the Composition of Combustion Products." (

"Classification of Fuels by Their Thermal Properties."

"Methods for the Computation of the Excess-Oxygen Coefficient During the Combustion of fuels in an Atmosphere of Oxygen and Oxygen-Nitrogen Mixtures." (Study of Combustion Processes; Collection of Articles on Work, Done by the Power Institute imeni G. M. Krzhizhanovskogo AS USSR) Moscow Izd-vo AN SSSR, 1958. 123 p.

(Laboratory for the Intensification of Furnace Processes).

for abstract see Khitrin, L. N.

RAVICH, Mark Borisovich, prof., doktor tekhn. nauk; KORNEE, G.P., prof., doktor tekhn. nauk, sasluzhennyy deyatel' nauki i tekhniki, otvetstvennyy red.; SOBOLEV, G.K., red. izd-va; ZELINSKOVA, Ye.V., tekhn. red.

[Simplified methods of computing in heat engineering] Uproshchennaya metodika teplotekhnicheskikh raschetov. Moskva, Izd-vo Akad. nauk SSSR, 1958. 286 p.

(NIRA 11:8)

(Heat engineering)

RAVICH, M. B. (Dr. Tech. Sci.)

"Methods of Thermotechnical Computations for the Combustion of Gas With  
Varying Composition"

(Theory and Practice of Gas Combustion; Transactions of a Scientific and  
Technical Meeting) Leningrad, Gostoptekhizdat, 1958. 343 p.

SOV/137-59-1-39

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 1, p 5 (USSR)

AUTHOR: Ravich, M. B.

TITLE: Heating Power of a Fuel and a Simplified Method for its Calculation  
(Zharoprovoditel'nost' topliva i uproschchennaya metodika yeye  
podscheta)

PERIODICAL: V sb.: Issled. protsessov goreniya. Moscow, AN SSSR, 1958,  
pp 91-96

ABSTRACT: Examination is made of the dependence of the heat value of a fuel  
(F) and of its heating power (maximum or calorimetric combustion  
temperature) on its composition and quality. The mean specific  
heat of the combustion products of a number of F and of their  
elementary components were found. Formulae for calculation of  
the heating power of various types of gaseous, liquid, and solid F  
and of their combustion temperature with an excess of air are  
adduced.

N. V.

Card 1/1

SOV/137-59-2-2306

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 2, p 11 (USSR)

AUTHOR: Ravich, M. B.

TITLE: Method of Calculating the Heat Lost in the Waste Gases and as a Result of Chemically Incomplete Combustion From the Composition of the Combustion Products (Metodika podscheta poteri tepla s ukhodyashchimi gazami i vsledstviye khimicheskoy nepolnотy goreniya po sostavu produktov goreniya)

PERIODICAL: V sb.: Issled. protsessov goreniya. Moscow, AN SSSR. 1958.  
pp 97-99

ABSTRACT: The amount of heat lost in the waste gases  $q_2$  as referred to the potential heat of the fuel  $Q_p^H$  is calculated on the basis of the relationship between the actual temperature of the gases  $t_{exh}$  and the calorimetric temperature  $t_{max}$  by means of the following simplified formula:  
$$q_r = t_{exh} / t_{max} [C' + (H - 1)K] \cdot B \cdot 100$$
 where the values for the factors  $C'$ ,  $K$ , and  $B$  are found in a table depending upon the type of fuel and  $t_{exh}$ . The value of  $H$  is found from the formula  
$$H = CO_2 \text{ max} / (CO_2 + CO + CH_4)$$
 where  $CO_2 \text{ max}$  is the maximum possible amount in the combustion of the given type of fuel and the denominator is the content of the respective constituents in the combustion products.

Card 1/2

SOV/137-59-2-2306

Method of Calculating the Heat Lost in the Waste Gases and as a Result (cont.)

The losses of heat  $q_s$  as referred to  $Q_P^H$  are calculated with the formula:

$$q_3 = [30.2 \text{ CO}_2 + 25.8 \text{ H}_2 + 85.5 \text{ CH}_4] H 100 / P \text{ where } P = Q_P^H.$$

M. M.

Card 2/2

SOV/137-59-1-38

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 1, p 5 (USSR)

AUTHOR: Ravich, M. B.

TITLE: Classification of Fuel According to its Heating Power (Energeticheskaya klassifikatsiya topliva)

PERIODICAL: V sb.: Issled. protsessov goreniya. Moscow, AN SSSR, 1958, pp 100-102

ABSTRACT: Various types of fuel (F) were divided, according to their heating power (HP) (calorimetric combustion temperature), into two groups: 1) High HP ( $> 2000^{\circ}\text{C}$ ), including gaseous F with a low N<sub>2</sub> and CO<sub>2</sub> content, liquid F, and solid F low in moisture content, and 2) low HP ( $< 2000^{\circ}$ ), including gaseous F with a high N<sub>2</sub> and CO<sub>2</sub> content and solid T with a high moisture content. A summary of some characteristics of F of these groups is adduced.

N. V.

Card 1/1

SOV/137-59-1-74

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 1, p 10 (USSR)

AUTHOR: Ravich, M. B.

TITLE: Method for Calculating the Excess-oxygen Coefficient in the Combustion of Fuel in an Atmosphere of Oxygen and Oxygen-Nitrogen Mixtures (Metodika podscheta koefitsiyenta izbytka kisloroda pri szhiganiyu topliva v atmosfere kisloroda i kislorodno-azotnykh smesey)

PERIODICAL: V sb.: Issled. protsessov goreniya. Moscow, AN SSSR, 1958,  
pp 103-105

ABSTRACT: A method is given for the calculation of the excess-O<sub>2</sub> coefficient  $\alpha$  by the analysis of the combustion products without first determining the O<sub>2</sub> content in the air blast upon the complete combustion of the fuel:  $\alpha = ([O_2]_{exc} + [O_2]_{nec}) / [O_2]_{nec}$ . For the direct calculation of  $\alpha$  according to the composition of the combustion products by the formula  $\alpha = ([O_2] + n [RO_2]) / n [RO_2]$ , a list of the factors  $n$  is given which shows the relationship between the volume of O<sub>2</sub> used up in the burning of a fuel with the formation of RO<sub>2</sub> and H<sub>2</sub>O and the RO<sub>2</sub> volume in the combustion products of pure combustible

Card 1/2

SOV/137-59-1-74

Method for Calculating the Excess-oxygen Coefficient in the Combustion (cont.)  
gases, industrial gases with low and high N<sub>2</sub> content, and various solid fuels  
N. V.

Card 2/2

84148

S/112/59/000/013/016/067  
A002/AQ01

11.5300

Translation from: Referativnyy zhurnal, Elektrotehnika, 1959, No. 13, p. 22,  
# 26316

AUTHOR: Ravich, M. B.

TITLE: Methods of Heat Engineering Calculations in Combustion of Gas of  
Varying Composition

PERIODICAL: V sb.: Teoriya i praktika szhiganiya gaza, Leningrad, Gosoptekh-  
izdat, 1958, pp. 140-150

TEXT: The method suggested is based on the assumption that with consider-  
able changes of the composition and the combustion heat of certain types of  
fuel, there will be small changes in: a) the calorimetric temperature  $t_{max}$   
(or heat productivity) and combustion heat in respect to 1  $m^3$  of dry combustion  
products, obtained during the complete combustion of the fuel in a stoichio-  
metric air volume; b) the thermal capacity of combustion products of carbon  
and hydrogen in a stoichiometric air volume at temperatures close to the heat  
productivity of different types of fuel (at an essential difference of the

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S/112/59/000/013/016/067  
A002/A001

Methods of Heat Engineering Calculations in Combustion of Gas of Varying Composition

thermal capacity of their individual components). The thermal capacity of combustion products of gaseous fuel in the temperature interval from 0 to  $t_{max}$  can be taken equal to 0.4 kcal/m<sup>3</sup> degree with an error within the limits of 1%. These assumptions made it possible to obtain formulae for a determination of the losses caused by escaping gases and by a chemically incomplete combustion. Having also determined the heat loss to the surrounding medium by a known graph, it is possible to determine the efficiency of the unit only from the gas analysis and from measurements of the temperatures of escaping gases.

B. I. L.

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

LINCHEVSKIY, Vadim Pavlovich, prof. [deceased]; RAVICH, M.B., prof., red.;  
TSUKHANOVA, O.A., kand.fiz.-matom.nauk, red.; VAGIN, A.A., red.  
izd-va; ISLEN'T'YEVA, P.G., tekhn.red.

[Fuel and combustion] Toplivo i ego ozhiganie. Izd.3., ispr. i  
dop. Pod red. M.B.Ravicha i O.A.TSukhanovoi. Moskva, Gos.suchno-  
tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1959. 398 p.  
(MIRA 12:11)

(Fuel) (Combustion)

Kawauchi, M.P.

Approved for release under the Access to Information Act  
by the Canadian Security Intelligence Service, Ottawa, Ontario

1. A. Identification of individual  
B. Description of individual  
C. Description of individual's family  
D. Description of individual's residence  
E. Description of individual's place of employment  
F. Description of individual's financial resources  
G. Description of individual's political activities  
H. Description of individual's associations with other individuals  
I. Description of individual's social activities  
J. Description of individual's religious activities  
K. Description of individual's health and physical condition  
L. Description of individual's education and training  
M. Description of individual's military experience  
N. Description of individual's political beliefs  
O. Description of individual's political activities  
P. Description of individual's associations with other individuals  
Q. Description of individual's social activities  
R. Description of individual's religious activities  
S. Description of individual's health and physical condition  
T. Description of individual's education and training  
U. Description of individual's military experience  
V. Description of individual's political beliefs  
W. Description of individual's political activities  
X. Description of individual's associations with other individuals  
Y. Description of individual's social activities  
Z. Description of individual's religious activities

TRIPATHI, L.N.  
SAATCHI, A.B.  
SAATCHI, A.B.  
SAATCHI, A.B.

TRIPATHI, V.N.

S/196/61/000/006/011/014  
E194/E435

AUTHORS: Khitrin, L.N., Ravich, M.B., Kotova, L.L.

TITLE: Procedure and results of determination of the combustion constant of pulverized fuels

PERIODICAL: Referativnyy zhurnal, Elektrotehnika i energetika, 1961, No.6, p.9, abstract 6G58. (Sb. 3-e Vses. soveshchaniye po teorii goreniya. T.2., M., 1950, pp.123-130)

TEXT: In determining the combustion constant the accuracy of the results chiefly depends upon the process being as isothermal as possible. Ballasting the gas flow with finely divided material was selected as an effective method of solving this problem. For this purpose the fuel under investigation may be used either alone or mixed with inert material. In either case, it is important that the solid phase should be present in sufficient quantity to ensure "absorption" of the total heat of reaction without appreciable heating of the system. Ballasting the flow with dust of the actual fuel under investigation is to be preferred because there is then considerable excess of fuel and the

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E194/E435

Procedure and results of ...

dust particles burn very little. Accordingly, the dimensions of the dust particles and their reacting surface may be considered to remain unchanged, which simplifies calculation of the constant. High fuel concentration also permits clearer observation of possible chemisorption processes. Observation of the course of the process is simplified because the primary characteristic of combustion is consumption of oxygen in the flow. Accordingly, in making the tests it is only necessary to register the changes in composition of the gaseous product along the flow. The experimental equipment consisted of an electrically heated vertical tube 800 mm long and 8 mm internal diameter. Pulverized fuel in a flow of oxidizing medium (air or nitrogen-oxygen mixture) which had first been heated to the test temperature was delivered to the tube, the dust was entrained by the flow and carried up the tube. Temperature differences of 10 to 15°C were permitted between the start and end of the tube. The excess oxygen coefficient was 0.035 to 0.10. Tests were made with coked, powdered, Moscow Basin coal and with milled peat previously heat-treated for six hours at temperatures of about 600 and 800°C. The dimensions of the mean fractions ranged from 65 to 367 microns. The initial oxygen

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E194/E435

Procedure and results of ...

concentration ranged from 3.7 to 20.9%, the dust concentration from 0.5 to 8.5 g per litre at n.t.p. and the temperature from 370 to 700°C. It was established that the oxygen consumption and the amount of gaseous oxides formed are not linear functions of the effective oxygen concentration. The rate constants of these processes do not depend on the dimensions of the particles. The gaseous reaction product with oxygen is CO<sub>2</sub> (with peat). On burning coke of Moscow Basin coal the oxygen is strongly absorbed by the coke, the process is of a chemi-sorption character. Sorbed oxygen is returned to the gaseous phase in the form of CO<sub>2</sub> after the fuel has been heated to a temperature higher than that of the process. An equation is given for the total oxygen consumption. There are 4 references.

Abstracted by S.Tager.

[Abstractor's note: Complete translation]

Card 3/3

RAVICH, Mark Borisovich; SAVINA, Z.A., red.izd-va; SIMKINA, G.S.,  
tekhn.red.

[Fuel, the bread of industry] *Toplivo - khleb promyshlennosti.*  
Moskva, Izd-vo Akad.nauk SSSR, 1961. 132 p.

(MIRA 14:2)

(Fuel)

PHASE I BOOK EXPLOITATION

SOV/5446

Ravich, Mark Borisovich, Professor, Doctor of Technical Sciences

Uproshchennaya metodika teplotekhnicheskikh raschetov; teplotekhnicheskiye raschety po obobshchennyim konstantam produktov goreniya (Simplified Methods for Heat-Engineering Calculations; Heat-Engineering Calculations According to the Generalized Constants of Combustion Products) Moscow, Izd-vo AN SSSR, 1961. 303 p. Errata slip inserted. 5,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Energeticheskiy institut im. G. M. Krzhizhanovskogo.

Resp. Ed.: G. F. Knorre, Honored Scientist and Technologist, Professor, Doctor of Technical Sciences; Tech. Ed.: G. S. Simkina.

PURPOSE: This textbook is intended for personnel concerned with heat engineering.

COVERAGE: The author presents a simplified, economical method for heat-engineering calculations, based on "heat output" (i.e., the

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Simplified Methods (Cont.)

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theoretical maximum combustion temperature) and on other constants. Theoretical principles of the new method, and examples of calculations using the old and new methods (showing good agreement in results), for boilers, gas generators, furnaces, and engines are given. Included are methods of reckoning heat lost with escaping gases, heat losses due to chemically incomplete combustion, gasification efficiency, and effectiveness of heat recuperation. G. F. Knorre wrote forewords to all three editions. No personalities are mentioned. There are 61 references: 58 Soviet, 2 English, and 1 German.

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RAVICH, M.B., inzh.

Main trends in the building of textile factories. Opyt  
(MIRA 16:8)  
stroj. no.33:6-46 '61.